



Transcript of “Steve Wood: Reduce High Blood Pressure & The Benefits of Isometric Exercise - #234”

Bulletproof Radio podcast #234

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Dave: Hey, everyone. Welcome to Bulletproof Radio. I'm Dave Asprey. We're recording this in the brand new studio that we're still finishing, to be perfectly honest. You should be getting better audio quality. If you're watching this on YouTube or on iTunes Video you're going to see some cool stuff here. For instance, I'm holding in my hand the subject of today's discussion. Today's interview is about grip strength. You might be driving your car going, "Why do I care about grip strength, and what the heck is Dave holding in his hand? That is the world's ugliest or weirdest biohacking device ever." But there's a point to this.

Grip strength matters because in the very very early days of Hollywood in order to get film to work you actually to manually wind the film itself. What I learned during the filming of the MOLDY Documentary was that there's still a position called grip. We had a guy with special gloves who would hold the microphone, and he was the grip. I got a taste of that filmmaking experience. It turns out that, to this day, when we talk about grip we're still talking about grip strength. This is not a biohacking device. Although, I wish it was because it's so cool. This is an old, very old, probably, I don't know, I'm guessing 1950s video camera.

Steve: A Super 8.

Dave: A Super 8. It just looks cool, and it looks like you could also use it as a Klingon ray gun. If you're not watching this you're missing out. You could also probably squeeze it somehow. There you go. You're gripping it, winding it up. What's going on with grip strength is pretty profound. Today's guest sitting next to me, if you're watching, is Steve Wood of Zona.

Steve: Zona Health manufacture a device that is being used to help people lower their blood pressure basically more effectively than anything else we're finding.

Dave: Check that out. If you've been following Bulletproof for a while you already know that if you go to the Bulletproof website on the tech page there's this little device that looks vaguely- Sorry, Steve. Vaguely phallic.

It's got magic powers, to be perfectly honest. It is a flat-out biohacking device. It is biofeedback, and it teaches your nervous system to do new things. I put it on there when we first opened the store, even though it's not something that I talk about a lot, because it's got such profound impacts. Finally, actually it's overdue, Steve, to have you on the show. I wanted you to talk about what training your vascular system could do, because this is not something that's hard to do. It's not something that's expensive. It's something that is profoundly effective. That's what today's interview is about.

What does grip strength mean? Why would you care, even if you're not a rock climber, or someone who has a need for a strong grip? What does it mean for your performance? What does it mean for your health? First of all, give me a little bit about your background. How did you get into something as bizarre as, "How hard can you squeeze this little feedback device?"

Steve: It's a great question, and it's a strange answer. I'm a pilot. In my spare time I enjoy flying.

Dave: What kind of a plane do you have?

Steve: What's called a Turbo Retractable Cessna 182. It's a four place plane. I've had twins, so I'm certified for gliders, seaplanes, a variety of planes.

Dave: You're a pretty serious pilot.

Steve: Serious pilot. Instrument rated, and I've flown a lot of hours for- I'm not military grade, but I fly a lot of hours.

Dave: You know the military grade guys. You've had a beer with them and they didn't kick you out?

Steve: I actually trained one. I trained my cousin to fly early on. He got the blood from me. He just excelled past me, and joined the Air Force, and became a U-2 pilot, and now flies for United.

Dave: What does flying have to do-

Steve: There you go.

Dave: -with your, would you call yourself a medical device startup? Or what would you say?

Steve: We're a medical device startup. What flying has to do with it is that every pilot has to take a flight physical on a regular basis. I've been very athletic all my life. I played high school sports, college sports, kept playing, kept active. Basically, I wondered why my blood pressure was going up when my doctor told me, "Steve, you got to change your lifestyle." I said, "What am I going to change?" "Quit salt, and quit this, and quit that," none of which had any effect for me.

Dave: What was your problem? High blood pressure? Low blood pressure?

Steve: It was high blood pressure. It was starting to climb into those ranges where they were starting to talk about drugs. The time to start something is before you get there. Turn it before it gets bad. I started looking seriously into that, had sold a previous company, and was sort of bored, and found this guy, Dr. Ron Wiley, who had done some Air Force research in a full lab. I'm talking about centripetal force. They were strapping the pilots in. They were running a needle into their vein and keeping live blood pressure as they spun them around under nine Gs.

Dave: I want to do that. That sounds awesome.

Steve: It does. You should see the pictures.

Dave: Look at their faces all stretched back, and all.

Steve: Their body is definitely deformed. As he did this, a couple of pilots were pre-hypertensive. As he went through the data when he went back to the university he noticed their blood pressure dropped. He had them

doing a maximum squeeze, an isometric squeeze, for as long as they could hold it while they did that.

Dave: While they were spinning.

Steve: While they were spinning.

Dave: These guys were on one of those things you'd see in a sci-fi movie, at the end of a long arm spinning around.

Steve: Yes.

Dave: He corrected their blood pressure randomness, that you're going to get weird fluctuations, or that, just by having them squeeze really hard.

Steve: He didn't know what he was doing. It was an accidental find. As he got the data, then he clues together a device that was the size of this table, with weights, and strings, and all these different things. He started trying to find a way to replicate those discoveries.

Dave: How long ago was this?

Steve: When he first started this thing it was in the '80s, 40 years ago. Then before he could even get something was really starting to work was in the '90s. Then before he could get something he could make it was into the early 2000s. As he started working through this what he found was there was a large background of literature on isometric exercise. They knew a couple of interesting studies that really kicked Dr. Wiley off, one was a study done in Canada on dock workers. They had a large study, 6,000 plus people. They found out of the dock workers about 20% of them did not ever get high blood pressure when they should have.

Dave: Whoa.

Steve: That's a major change.

Dave: Just from dock workers?

Steve: Just from dock workers. People who were doing medium or high levels of isometric exercise eight hours a day. Not something you and I can replicate.

Dave: Talk about what isometric is, because some people listening right now probably don't know what isometric is.

Steve: Right. It's not lifting weights. But, holding weights can be an isometric. One of the things that we discussed earlier is we're not talking going and squeezing something here.

Dave: If you're listening on the radio, I have a set of these Captains of Crush things. Actually, Tim Ferriss sent me one a while back in his quarterly box. I was like, "This is the coolest thing ever." It's a way to progressively get a stronger grip. This is not one of those strength training, squeeze your hand kind of things that we're talking about. But we're actually using one right now.

Steve: Right. But if you take that same squeeze and just hold it all the way down that's an isometric. You're putting your muscles under tension, under load, and keeping them there without changing them. What you're doing is you're shortening the length and holding it.

Dave: Another example of this would be getting into a pushup position an inch off the ground, and just holding yourself there and not going up.

Steve: Correct.

Dave: A plank pose, essentially.

Steve: Yes.

- Dave: This is that example. Whereas, you could maybe do ten push ups, but holding for one minute two inches off the ground is just a different kind of muscle activation.
- Steve: It's different muscle activation with different results. If you regularly exercise in isometric exer- Let's go to aerobic, riding your bicycle. A typical person riding a bicycle, 30 minutes a day, five days a week, will drop their blood pressure six or eight millimeters, which is how you measure blood pressure, six or eight points systolic.
- Dave: That's the top of the two numbers.
- Steve: That's the top of the two numbers. That's an important number. If you get anything over three to five it's going to change your life. It's a good thing. Normally, aerobic can't really be multiplied. You could do all sources. You could swim, or you could- It's not going to change much. Isometric typically is only two or three.
- Dave: Isometric exercise is not as good as aerobic exercise for lowering blood pressure.
- Steve: It isn't normally. But what Dr.-
- Dave: But there's a hack, right?
- Steve: Yeah, there is. There's a hack. Dr. Wiley started playing around with the way that you did this. If you found the maximum point every day, because your body changes, and then if you find a certain percentage for a certain period of time, mathematical formula, with the right amount of rest kicked in. Dr. Wiley was able to come to an invention where a 12-minute therapy, only of which eight minutes are actually an isometric exercise, was able to drop blood pressure ten or more percent. Typically-

- Dave: 10%. Compared to points, that's like 18 points for someone with high blood pressure. Maybe 15 or 12 points. Way better than aerobic exercise in 12 minutes. How often? 12 minutes a day?
- Steve: 12 minutes once a day, five days a week. A typical drug will drop blood pressure six to eight millimeters. All of a sudden they're doubling or tripling that response in the research labs. Anyway, Dr. Wiley looked around and made this little thing that looked like a Star Trek phaser.
- Dave: Nice. Does it make a sound, like a beep?
- Steve: It does beep.
- Dave: There you go.
- Steve: It does beep. It was fun. All the way back to the story, I didn't want to take drugs. I wanted to control my own blood pressure. I was already exercising. I wanted to do the lifestyle changes. I found Dr. Wiley's thing through a Paul Harvey Oshkosh aviation thing. Off the wall, how do I find this? I don't know. Found that, ordered one, put it on my credit card so I could dispute the charge if it was snake oil, started tracking. My family has a background in medicine, and my brother is a major distributor for a well-known orthopedic supply.
- Dave: You know what you're doing.
- Steve: Yeah. We have medical personnel. We know what we're doing. We started tracking, because they had to make this device for me. They could make it, it took them 11 weeks to make it. Every Friday I would go into my physician, have them measure my blood pressure. I would get a third party. Started using the device. It's an interesting thing, I didn't know it at the time, I do now. At four weeks into it I'd seen really no change in my blood pressure. I called up Dr. Wiley and said, "What's the story?" What he said was, "Well, just keep going. It varies in response for people. But in the next week or two you'll see a major change." A week later my blood pressure dropped 27 points systolic-



Dave: Holy crap.

Steve: -and 20 points diastolic.

Dave: What was it before?

Steve: I was in the high, just prior to pre-hypertensive.

Dave: About 150-ish? 160-ish?

Steve: In the 150 range. 140-

Dave: You dropped 26 points.

Steve: 27 points.

Dave: Into a healthy range, essentially.

Steve: Into a healthy range. What this does, what this isometric exercise does, is it's like a rubber band. The further away you are the bigger the modification is. It doesn't take people from 110 to 80. But I've seen people come from 200 to 120.

Dave: Wow. Is there a bag of pills that comes with it?

Steve: No, there's no pills.

Dave: Of course not. I'm kind of asking questions, for people listening, because we've had it on the website. When I first met you I'm like, "This is the perfect example of how using a computer to talk to your nervous system and to help you control your biology can have profound effects." That's why I put it on the Bulletproof website. It hasn't received as much attention as it should. Because, compared to restricting salt, which raises your heart attack risk, unfortunately, when you restrict it, even to the levels that they're recommending you restrict it now. This idea of you could be on drugs or diuretics, or those other things that are rough

on your kidneys, or you might be able to just train your body to do it right.

Steve: Training your body to do it right makes lots of sense to me. There's some backup. They've done studies on this now. We're not standing alone anymore. The Journal of Hypertension, which is the main journal in our field, did a meta analysis. They took a bunch of studies, pulled them together, decided which ones were valid and not valid, and came out with it at the end of the day saying, "We expect it to drop blood pressure by 10%." I want to give you a relative idea of what that means to the world. Because, basically, high blood pressure is the number one attributable cause for death in the world. It's a controllable thing. There's 1.1 billion people that have this issue. Big deal. Lots of money spent on it. The drugs have side effects. But at the end of the day what the Journal of Hypertension postulated, they said, "If this continues this way, we would expect strokes to go down by 46% population-wide, and we would expect cardiovascular disease to go down by 29% population-wide."

Now, just in the hard numbers, a stroke costs about \$150,000, a heart attack costs about \$100,000. There's some good money there. But the quality of life issue, and that's what you and I have talked about other times. Quality of life is worth a lot. If you're going to save for a retirement, you don't want to be retired in your bed stroked out.

Dave: It's really inconvenient.

Steve: It's hard to enjoy. It's hard to enjoy.

Dave: It's terrible.

Steve: We can't guarantee anything for what we're doing. What we're doing is training you and walking you through an exercise. What we can guarantee is that the results will be something that you like. Because what we've found in studies-

- Dave: When you say guarantee that, is that a business guarantee?
- Steve: Yes.
- Dave: If someone gets the Zona Plus- By the way, I suppose we have a commercial relationship, just to disclose that, because I am a distributor. I'm an extremely small distributor. I put it on the site, not because that's how I make a living. We're a coffee kind of company. But just because it's one of the things I'm like, "This is one of the coolest ideas I've ever heard of." I think it's been up for two and a half years. But you're sort of coming out now with more research. That's why you're on the podcast.
- Steve: Correct, more research, and clarifying what has happened in this research. Of all the studies that have been done, almost 100% of people have had significant responses.
- Dave: If people try it, you're at this point able to guarantee that they like the results or you just refund the money.
- Steve: Refund the money.
- Dave: That's a good deal.
- Steve: Straightforward deal. Now, I know coffee's a great model in a business, because you have to- You consume it. Our device isn't like that. It should last 15, 20 years.
- Dave: You maybe can share it with your friends?
- Steve: Well, it's designed to share with your significant other. There's two users available on it. Information, we're looking for people to get involved in our cloud. We want them to share their information, their success. Because we're actually finding we have lots more numbers than most of the researchers do.
- Dave: There's tons of data you can get from this thing.



Steve: There's 20,000 plus people using this now. An awful lot of them are doctors.

Dave: I have it here. This is- You didn't bring this one. I've had two or three of these laying around the house for a long time, just to use occasionally when I, "Oh, look. I'm doing something. I'll do it." But here in the biohacking lab, the Bulletproof Labs, you just got a tour downstairs, this is part of the gear that I have here for increasing human performance. I think having vascular-level training, or probably neurovascular is the right word for it.

Steve: Neurovascular would be correct.

Dave: There's not really a downside, or is there? What are the risks of training like this?

Steve: There's two basic risks. One, we put a warning on all of our product that if you are on medication and you start to get lightheaded when you stand up it's because your blood pressure is dropping too low.

Dave: After you use this.

Steve: After you use it. Please go talk to your physician and have them lower your medications. That's one risk.

Dave: You can pass out, hit your head, and die, to be perfectly honest.

Steve: If you stand up and start feeling dizzy, sit down and just stop. Talk to your physician. The second risk, basically, as you go through the second risk, is that you start taking this lightly and think everything's okay. Blood pressure is something you can't feel paced hardly at all. You need to monitor it, you need to keep track, and you need to take care of it. Some people think, "I'm going to solve everything." Well, you don't solve everything unless you become consistent. It takes consistent use. We've had some people say, "I'm only using it two days a week, but I should see some benefit." What's interesting is what Dr. Wiley found, is there is

a certain stress level, percentage stress level, time interval, rest, repeated on a sequential basis to get results.

Dave: How many weeks does someone need to use this?

Steve: We've found people see results in as short as two and a half weeks. I've got my COO, who is very Dutch. He's American, but his background is Dutch, and his genes are very Dutch. He took 14 weeks. I say this because he's stubborn, which sort of matches. His father took 14 weeks, as well.

Dave: He did it five days a week for 14 weeks.

Steve: For 14 weeks. We have one report of one lady who called us up after a year. I actually talked to her, because I thought this was strange. She goes, "I was beginning to get ready to send this back to you." I thought, "I would never have done this for a year." She said, "But it dropped my blood pressure." We have one guy called me and he says, "It's not working for me. It hasn't dropped my blood pressure." I said, "What do you mean?" He says, "Well, it didn't drop my blood pressure." I said, "Okay. Send it back, we'll give you a refund," which is what we're talking about. We don't want people not- He says, "I'll never send this back. You couldn't pry it out of my hands." I said, "Why?" He says, "I was going to commit suicide this coming week because I've had head pain for the last two years of my life." He says, "It's gone." He says, "That's what happens."

Dave: He had blood flow issues in his brain and it normalized his blood flow.

Steve: That would-

Dave: Is that what we're guessing?

Steve: That would be a guess. We know some things are happening physiologically. We're getting distensibility, that is the flexibility of your arteries is going up 267%. We can measure the change. Diameter,

brachial artery, is up about 10.5%. The resistance vessels, which is where arteries and veins come together, they're functioning better. The endothelium, which is the liner of the artery, produces nitric oxide, which is a vaso signaling dilator. You've got the increase in nitric oxide, you've got the endothelium smoothing and coming back to normal, and hit this one when you said neuro. You can measure the electrical system, the autonomic nervous system, whether it's parasympathetic or sympathetic-

Dave: It's fight or flight, rest and recover.

Steve: Exactly. Fight or flight. We change that. We can monitor the change inside of 30 seconds.

Dave: The other big tech that I talk about a lot-

Steve: Let's just take a deep breath.

Dave: I talk a lot about heart rate variability training. We have Stress Detective is the Bulletproof app for that. That's the same thing. It's about modulating that thing. You're saying 30 seconds of squeezing not too hard, not too light, which is the real genius of what this thing does, that that- I didn't actually realize this. I hadn't read that research. That it changes, it reduces your fight or flight, your sympathetic, and increases parasympathetic. That's interesting.

Steve: It changes it dramatically. Nicely, if you use this five days a week, and you're going to use it the rest of your life, but if you use it five days a week, and two years from now you go on vacation, you forget it. We're actually retraining the body. Don't stress out about it. If you're gone for a week it's not going to just come right back up.

Dave: Do you have to use this forever for 12 minutes a day?

Steve: You're going to use it forever.

- Dave: Wow. That's kind of inconvenient. I couldn't just do it for two months? I don't have high blood pressure, anyway, at all. But if I did it-
- Steve: You could do it for whatever long you want. But if you want to keep the blood pressure down, what happens is it climbs back up when you quit using it.
- Dave: Over how much time?
- Steve: Three to four weeks.
- Dave: Basically, you could use it for a while, stop using it, use it for a while, stop using it?
- Steve: I'll give you an example. It's not one that I want you to follow. I had a Delta Airline captain call me. He said, "I need to order another one of those Zone Pluses." I said, "Okay. What do you use it for, sir?" He said to me, he says, "Well, I use it for my flight physicals to get my blood pressure down." I said, "Really?" He says, "Yeah." He says, "I start six weeks before my flight physical and get my blood pressure down and pass, and then I do it again in six months when I have to take my flight physical again."
- Dave: That would be called cheating.
- Steve: Yes and no. It's legal. But, what he's basically saying is he doesn't care about the people in the back. He doesn't care about him and his family. He doesn't mind if he strokes out, and he doesn't mind if he has a heart attack.
- Dave: Well, there's two pilots, right? He's not making a wise choice.
- Steve: He's making a poor choice.
- Dave: The decision that people have is they could work on doing some combination of weight training and aerobic exercise, maybe high-

intensity training, all of which can have different amounts of effect on your blood pressure. They could look at dietary modifications. They could look at stress-reduction techniques like meditation, lifestyle changes, getting out of unfortunate relationships. They could take drugs that lower their blood pressure. Or they could do some combination of those things. Or they could say, "I'm going to spend 12 minutes a day," probably while you're doing something else. You need some attention. It's hard to watch Game of Thrones and do this, because you'll get distracted. But you could listen to a podcast, like, say, Bulletproof Radio, when you're doing this, and it will work just fine.

Steve: It would be easy. A lot of people do two things at once. We don't want you driving while you do this.

Dave: That would actually be really difficult. I can do heart rate variability training while I drive, and it's actually good, because when someone cuts you off you see that you went into fight or flight kick your ass mode. But I don't think it would be safe to do this, either. It's an interesting trade off, because people value their time, and their energy, and their effort, and their willpower. But they also don't want to spend money, which equates to time, and there's health risks from taking pharmaceuticals. There's health risks from eating anything, too, for that matter. There's a risk-reward. We want the reward to be much higher than the risk. I would say this is worthy of consideration as something you could do. If you're going to do an hour of cardio every day, which I actually don't recommend for all sorts of longevity, as well as over-training kind of things. It's possible to mess with your blood pressure that way. But this is kind of a time efficient way to achieve pretty substantial goals.

Steve: It's time efficient. It's typically less expensive in the long run. You get a one time expense.

Dave: I actually have to confess, because I didn't look at our website right before this. I don't know retail list on this device. What is it?

Steve: It's \$599.

Dave: It's about \$600. Not the cheapest. But compared to medication for a year it's cheaper.

Steve: Average person on medication co-pays a little over \$1,000 a year. Average mountain bike, what's it going to be? About \$500 to \$1,000. My friend's mountain bikes are four or five or 6,000. Typically that's where we are on that.

Dave: It's \$1,000 a person. Two spouses or a couple of people, roommates, whatever they are, can share one of these. Honestly, if you had four people in a house, is it really that hard for them to do it?

Steve: Yeah. Realistically, what's going to happen is the consistency- One of the things that we've had to build into this is an accountability standard. You do it, it tells you how you score, it tells you how you've done this week, it tells you how you've done in the last 12 weeks, and it keeps you on track. It will email you, it will tell you, it will remind you. There's things- Realistically, you can't get too far out.

Dave: That's kind of the difference between biohacking and quantified self. Quantified self is data collection and analysis to learn more. I'm a fan of that movement. Kevin Kelly, who's been on Bulletproof Radio, is one of the founders of it. Seth Roberts, another one of the guys who recently passed away. Also, we talked a lot about carbohydrate timing and sleep quality. Quantified self, I love, just like map makers. Because they get all this data, they crunch it, and then you become conscious of behaviors you have. There's a lot of interest in sensors with quantified self.

From a biohacking perspective, what gets me really excited is not so much the data, but the interaction of real-time very tight feedback systems with the body. The biohacking perspective of the Zona device is when it tells you, "Squeeze harder right now. Squeeze less. Squeeze harder. Squeeze less." You do this to get your stuff exactly right. This is real-time feedback. That's what you get here. But then the quantified

self value, what happens here, is when you look at the screen it shows you a pie chart. It shows you how much you've done, and you upload it to the cloud. It shows you what you've done over time. There's the map, and then there's the, "Do it right, right now."

Steve: The stories about doing it right now are very interesting. The story just before we started this was, "This is really hard. It's not easy to do." Typically we tell people to allow about a week to be able to hold this steady. Some people earlier, some people longer. But we want them, because that feedback, that instant feedback, being able to take action immediately and get the results you want immediately, it's critical to doing this. It's absolutely critical. If you get off a little bit you lose the benefit. You can't be too high or too low. You have to be honest with the start. You have to squeeze hard for that one and a half seconds. If you don't squeeze hard you're going to get a weak result, and then you're not going to get any benefit. But you're right. Real-time feedback is what made the difference.

Dave: I've found that for every single intervention that has feedback, the tighter the control loop, the tighter that real-time, the better off that you are. Your nervous system is so impatient that in the time it takes you to form a thought it's like, "Oh, I'm so bored already." That, "Do it now," and it beeps, and it really gets your attention. Same thing with neurofeedback, all the sorts of training that I do for more the nervous system, but even reflex balance training. Imagine if you were trying to learn how to balance on a ball and there was a quarter-second delay before you fell over. You would never learn to balance.

Steve: Standing on the balls down in your room.

Dave: Oh, yeah. The vestibular training in the biohacking lab.

Steve: If I had to wait a fraction of a second-

Dave: You'd be on the floor.

- Steve: I'd be on my face. It would not have been good. We actually tried in the study, we put a piece of paper over their screen so people couldn't see their force. Even though they thought they were squeezing as hard as they could-
- Dave: They weren't.
- Steve: In a minute they were down to zero.
- Dave: It's the body lying to you, because it's so lazy. The other device downstairs is the ARX. People just heard an interview, if you're a longtime listener, within the last 20 or so episodes, the inventors of the ARX Fit device came on. This is a big thing, and you'll see it in videos of Bulletproof Labs later. But it uses a big 18-inch tablet to show you, when you're doing a bench press, or a pull down, or any of the other exercises. The entire time it's showing you a power curve so you can see, "I need to beat what I did on my last rep," even if there's only two or three reps. That real-time feedback is what makes it so after two reps you can't walk you're so sore. Same thing here. This is something that we couldn't do 20 years ago because the tech didn't exist.
- Steve: It did not exist.
- Dave: It's something throughout the entire history of exercise physiology that didn't exist either. Now we're basically making the nervous system pissed off that it's not doing better than it did before. A lot of this is not really the prefrontal cortex parts of the brain. It's the more primal competitive things that get kind of triggered for that. You can push yourself to beyond what you normally do. In this case it's not, "Squeeze harder." It's actually, "Squeeze less." This is a problem for me. When I do it I'm squeezing the thing, and it says, "Squeeze less." I'm like, "Less? All right." Then more, and then less. I realize that you can sort of feel that what I'm learning is control, rather than just raw power. If you want raw power you go to the Captains of Crunch things. These are progressively harder heavy-duty things, like professional-grade things

that rock climbers use. This is about just, "Do it harder." When you do this..

Steve: ...frequently as much as you can.

Dave: You're getting strength, but you're not getting much control. This is about, "Not too much, not too little." It's like the problem, teaching a robot to hold a wine glass without breaking it. It's the same sort of problem. You're teaching your body to hold your blood pressure, to regulate it within this range. Not too hard, not too little. This is one of those breakthrough things that's so different than the way we've approached this before, which is basically like make the body get rid of water. Dehydrate the body, that will lower blood pressure. There, we did a good thing. Maybe not. Or, some of these other approaches, like exercise and diet and all. This is something new. New technologies are disruptive by design.

In my whole career, the first thing I ever sold over the internet was a t-shirt out of my dorm room, believe it or not. In fact, it was a caffeine t-shirt. But that was a- Ecommerce was disruptive. Cloud computing was disruptive. I definitely played a role in the early days there, as well. I've been following these disruptive technologies my whole career. How do you do it better? But one of the things that happens when you disrupt big companies is they get pissed off. The guys who just figured out how to make commercial-perfect diamonds that are actually real diamonds, you can't find where they make the diamonds or where they live because they're concerned that they're going to get killed by the diamond mining conglomerate people.

Steve: De Beers.

Dave: Yeah, the De Beers people. That sounds weird. You can read about this in Wired. This isn't a conspiracy theory thing. This is just like- No, really. When you disrupt a multi-billion dollar industry, sometimes you just wake up dead. Should I be concerned about getting on the same flight as you, because aren't you getting-



Steve: No, you're really-

Dave: Millions of dollars.

Steve: You are much better-known than I am. People will actually remember your name. I hate to tell you, I think we're really safe there.

Dave: That's not true. Here's what's going to happen. Bulletproof Radio is number one ranked on iTunes in health and fitness most of the time. There's a really good chance that 100,000 people are going to listen to this conversation. If we have something that has the science that's behind this, because I've read many of the studies. We've talked. We've known each other for three years. You've been to the Bulletproof Conferences. By the way, that's a quick plug. Bulletproof Conference, October something something

Steve: 23rd.

Dave: Anyway, October, bulletproofconference.com. It's all good, and all that. But, anyway, you've been there. You're a very credible guy, and your technology is credible. I can't say that I've seen results because my blood pressure is already low. I don't have an issue with high blood pressure, but I've seen the science. This is a legitimate new disruptive technology. If 100,000 people hear this, I expect that a lot of them are going to pay attention.

Steve: Think of it this way. Here's sort of my little thing. When I first started out with this I was bored. I had sold my previous company.

Dave: What was your previous company, anyway?

Steve: It was bottled water.

Dave: You were a bottled water guy, I didn't know that.

- Steve: I did bottled water, yeah. Long story, but we had some of the best water in the world. Harry & David carried it. It was lots of things. Anyway, sold that to Chesapeake Utilities, a New York Stock Exchange company, and took a year to figure out where life was. I realized my blood pressure was changing, started looking around. That's how this happened, just an accident. My brother told me it was snake oil. He's the medical guy, and he says it's snake oil. He says, "But if it's real, Steve," he says, "if it's really it will change the world."
- Dave: Every disruptive technology is snake oil when it starts, every single time. That's basically the last cry of the people who are being disrupted. They always say it. Sometimes the people selling something are wrong, but that's always a charge that makes me interested in something.
- Steve: We started off everybody telling me we're nuts, but we're raising the money to do it. We went to our first American Society of Hypertension meeting and the doctors laughed at us. The third year we went to the International Society of Hypertension, the doctors were stealing the units of the table. It was here in Vancouver.
- Dave: No kidding.
- Steve: It was here in Vancouver. They were stealing the units off the table. We had to grab them.
- Dave: Those doctors, man. You got to watch them.
- Steve: It was an interesting deal. As things have changed, what I've come to the conclusion of is I really enjoy finding different ways to help people. We've tried to help people- In fact, we take our returned units, we can't resell them. We take those, we put them to various veteran's organizations.
- Dave: Good for you.

- Steve: If you're in a veteran's home you don't have any money. Anyways, the point is that what we want people to do is everybody has this in their life. Everybody knows a stroke or heart attack victim. Almost everybody gets hypertension.
- Dave: My dad has one of these. I gave it to him.
- Steve: What we want people to do is just tell people, "There's a possible solution that has very little downside."
- Dave: If it doesn't work you send it back.
- Steve: If it doesn't work you send it back.
- Dave: What percentage of them do you get returned?
- Steve: Somewhere between 3-7%, depending on what kind of deal it is.
- Dave: That's kind of how it is with almost any device. That's not 20%, which is-
- Steve: Most of the people tell us that they've never used them and they send it back. We've only had a couple come back, we had a couple people say, "I don't like the color."
- Dave: It is kind of-
- Steve: I'm sorry. It's grey and lavender.
- Dave: It's a shade of grey, but-
- Steve: That's what they said.
- Dave: I took it out of-
- Steve: Is it 50 Shades of Grey?

Dave: I took it out at TSA and they're like, "Dave, what is that?" I'm like, "I can't tell you."

Steve: Yeah, please don't. I've been told I need to add features. The point is we had it come back for that. We've had people come back if you have very bad arthritis.

Dave: Just because your joints don't work.

Steve: You're not going to be able to squeeze. But I had little old grandmothers, 87 years old, who could barely squeeze, call me up and say, "My blood pressure's under control." My orthopedic surgeon who played at University of Michigan said, "My blood pressure's lower than it has been since I went to college."

Dave: There's an angle here that the people listening probably- You probably didn't expect this. I just had Max Lugavere on. We were talking about Alzheimer's disease. We were talking about the role of basically inflammation in it. But a lot of people who are diagnosed with Alzheimer's disease or senile cognitive dementia don't have either one. They actually have low blood pressure to the brain because they're on blood pressure meds that lower the blood pressure so much they don't get enough oxygen in their brain. They're like of loopy, their memory goes. If you have a non-pharmaceutical way to teach the body to do what it's supposed to do anyway, a lot probably, I don't know what percentage, but certainly nowhere near half. But some percentage of people who are seriously addled in their own age suddenly will come back to life. That is phenomenal.

Steve: We have little to no research on this. However, the research we have on other aspects on the little small vessels, the resistance vessels, tells us that what you're saying is accurate.

Dave: This is just from restoring blood flow because they went off the blood pressure meds. They're just over-prescribed blood pressure meds.

- Steve: That's one. But we're remodeling the vessels. We're changing diameter, flexibility, and in effect there's an inflammatory response change. Those are things that are going on in this. Can I tell you what's going to happen? No. It's outside of our area of expertise. But we give the same guarantee for anything.
- Dave: What do the regulatory authorities, what do they think about this? Is this a medical device? Do you need a prescription? All that kind of stuff.
- Steve: It depends on where you are, what country you're in. Some countries it's a medical device with prescription.
- Dave: What's an example of one of those?
- Steve: Some of the European countries. In Germany it's both prescription and over the counter.
- Dave: Is it covered by insurance?
- Steve: It is not covered by insurance.
- Dave: Yet. It will be, though. Because if your socialized medicine-
- Steve: It's a low-cost solution. If the results continue to be this way it's the cheapest solution for everybody. The alternative to this in drops is actually surgery, and it's a \$15-20,000 surgery with mortality. But those are interventions that are drug interventions or surgical. This is, for lack of a better word, a device that is a guide to an exercise, a lifestyle change. Health Canada, both over the counter and prescription, not cover.
- Dave: By the way, thank you Health Canada for making it available over the counter. That is a sign of a free country. Thank you.
- Steve: Yes. Short list for Australia. We're looking to go to other places. Interestingly enough, a lot of in the United States-



- Dave: What about the US?
- Steve: In the US it's over the counter.
- Dave: Go America.
- Steve: It's over the counter. Not only is it over the counter, but generally if you go in and you have- If you can show demonstrable results, typically you can use a Health Savings Account for it.
- Dave: You can use your HSA to buy this?
- Steve: Typically.
- Dave: Wow.
- Steve: I would have a doc write you a prescript, just to cover you. But we've had a number of people tell us they do it. We don't do the paperwork, but it is an FDA-cleared device. It is something that you're using. You're allowed to do this if you can show results.
- Dave: That is a huge thing. This is about the opposite of an infomercial. We have these on the Bulletproof Store. I appreciate if you do that, and you go there and you support this podcast, and all that kind of stuff. Also though, you go to Zona.-
- Steve: Zona.com.
- Dave: Zona.com. Do you sell them directly, or do you-
- Steve: We sell them directly. Put in your notes that they heard it on Bulletproof.
- Dave: Okay, cool.
- Steve: We'll do something special for them.



- Dave: We don't have anything set up at all right now. I want you to know about this, if you're listening to this. That's the goal here. I am not in the business of selling little dildo-shaped devices that will change your life. That's not what Bulletproof's about.
- Steve: But Bulletproof has them on their site.
- Dave: It's about knowledge.
- Steve: They cover everything. They cover everything. Get it through Bulletproof, we'll be perfectly happy.
- Dave: Or get it through you. But what I'm saying is just get it if it's going to help you, and it's not important if you buy it through Bulletproof, but I'm grateful if you do. This isn't a sales pitch, is all I'm saying.
- Steve: When you see results, please tell us. It will change the world if we can get this out there. We've got some designs for third-world countries, where if we can get this going the right way we'll be able to put one of these per village. There's things out there that we can change. Theoretically, just theoretically, we can save the US about \$26 billion a year in just the medications for this.
- Dave: Wow.
- Steve: When you add in- We did a study for Humana on what the downstream costs are. We think we can save Humana, just a small insurance company, believe it, between \$3-4 billion a year. Then you add to that quality of life. Now, we've got work to do. There's more studies to be done. There's all kinds of stuff to do. We're a small company. We don't have the money to just chase everything.
- Dave: You guys are really small. That's one of the reasons I invited you on. I'm hoping to drive some more business for you, because this hasn't been done before. There isn't even an analog. Though it saves you about 50 years, there just hasn't been the ability to have this kind of interface

with the human body before. That's what gets me super excited. Do you actually remember how we met?

Steve: We met through Michael Fishman, Consumer Health Summit.

Dave: About three years ago.

Steve: He told me you were just a sharp guy. I didn't know you at all. He said you were a sharp guy. You liked this, and you had me come to San Francisco and speak at a Bulletproof Conference.

Dave: At the very first Bulletproof Conference you were a speaker there. But I remember-

Steve: I knew nothing. I didn't know what you were or who you were. I went to the conference and my eyes opened up. I thought, "I like this. This is something that I can get my teeth into."

Dave: Hacking the human body is interesting.

Steve: Actually it's incredible.

Dave: That conference was only 100 people. The next year it was 500 people. This next one coming up, I don't know if it's really going to happen, but I suspect we might have 1,000 people there.

Steve: Wow.

Dave: They're there because you get to experience the devices like this. I'm pretty sure you'll be there at this next one, as well.

Steve: I think it makes sense. I was just getting a kick out of watching your success. I think I've talked to you a couple times- Well, we've talked several times.

Dave: Quite a few times.

- Steve: Quite a bit. But I've just watched, and it's been good to watch you succeed and watch the world look at you. The idea, it's time. It's the right time.
- Dave: Take control of your biology, because something's controlling it. It's either you or it's- It's not random, whatever it is.
- Steve: I sure don't want to be in the healthcare system. The healthcare system today, pretty much wherever you are, is limited. If I can stay out of it by a simple remedy, whether it be walking a mile a day, or lifting some weights, or doing this, whatever it- If I can stay out of the healthcare system I want to stay out of it. It's important.
- Dave: I was actually just doing the math. Right now for Bulletproof employees and people on the Bulletproof team I give them more store credit on Bulletproof than we pay for their insurance premium to cover- For employees who have insurance coverage. I kind of feel like that's where the value is. The insurance coverage is you get into a car accident or you have some trauma, that's really a good thing. But when it comes to preventative maintenance of the body, to maintain a healthy state it feels like having access to quality food and quality supplements is a way better investment.
- Steve: It is. Under the new healthcare law, and it's something I'm trying to figure out, but I don't know yet. If anybody's listening to us that has one of these medium to large size companies, you can take if you can do a change in lifestyle in a corporation setting you'll get a tax credit of \$800 a year.
- Dave: How do they measure a change of lifestyle?
- Steve: I do not know. But I can tell you a change in lifestyle you can measure is if you gave one of these to every one of your employees you can watch their blood pressure drop. If you make three millimeters you change their life, and it's measurable.

- Dave: That's interesting. I'm just thinking, a change of lifestyle, I'm changing to the bacon lifestyle. I'm making sure that I'm eating six strips of good quality bacon from healthy pigs every year. I wonder how you quantify a change in lifestyle.
- Steve: They have rules for it and the lawyers are involved with this.
- Dave: They have rules, oh god.
- Steve: What can I say? But it is actually the truth. You can actually get a tax credit for your employees taking this situation and taking control of their future.
- Dave: That's really cool, especially for big companies. We both run very small organizations.
- Steve: Yeah, small companies. But if you had- Imagine if you had 10,000 people at your company.
- Dave: That's big.
- Steve: It pays for everything and makes a profit.
- Dave: I have friends at Google, and Twitter, and SpaceX, and companies like that with sizable employee base.
- Steve: I want to fly in SpaceX. That would make me happy.
- Dave: I've been out to SpaceX. In fact, I think- I don't know if it's even in the camera, but there's a picture of me with the X Prize anniversary crew. Peter Diamandis wrote one of the blurbs on the cover of The Bulletproof Diet. But these are the sort of companies that embrace disruption. I'll actually make an intro to- I don't know if it will be to Peter or someone on his team for you guys, because you'd think those companies are at scale. Elon Musk and his kind of organization, I have no idea if that will go anywhere or not. There's no implied association here.



Steve: I'm not holding out for anything.

Dave: I'm just looking for the big innovator companies like that. I just gave a talk, for instance- In fact, there we go. I gave a talk to all of Yahoo's employees about a month ago, which was really kind of an honor. 1,000 people in the room and all the rest of them over satellite on their weekly CEO call. We made Bulletproof Coffee and actually put a Bulletproof Vibe in the Yahoo gym. It was a lot of fun. But that's 14,000 people. If there's a tax credit involved, or even if there's not, you just increase performance or decrease employee absence just by a little bit. This feels like it's a good fit for corporate wellness.

Steve: It's a good fit.

Dave: When I look at the totality of these technologies, including the Zona, but also looking at the heart rate variability monitoring, the ability to build stuff into watches. I was CTO at Basis for a little while, the co-founder of their US leg of the company, and all these other things. Not enough corporate wellness programs are paying attention. By the time this gets to General Motors and Ford and Walmart, that might never happen, or it might be 20 years. But it seems like there's a spearhead of companies around Silicon Valley, New York, LA, those kinds of areas. I don't know, Austin. There's a few cool startups out there, as well. But companies that have grown to enough where there's hundreds of people where you can really make a difference with corporate wellness. Are you doing much in that sphere?

Steve: We're just discovering it. We've just found out that we qualify through the attorneys, and all this kind of stuff. We only have limited resources. Ultimately, there's people that specialize in corporate wellness programs. I need to partner with one of those people.

Dave: I imagine there might be a few of those listening today. One of the reasons that I do Bulletproof Radio is to connect people to knowledge and to experts. You qualify as a biohacker. That's why you were at the first bulletproof conference, for sure. I'm really pleased that you could

come out here to Vancouver Island to Bulletproof Labs to see all the massive toys downstairs. I'm actually glad that this is downstairs where I can show it to people. They're not going to get any change from doing a 12-minute session once when they come to visit me for a day.

Steve: It's interesting, though.

Dave: It's interesting that they can see it and experience it. Now, people watching can see this. People on the radio are just going to hear a beep, but I'm actually going to turn this thing on. The screen lights up, and it's a full-color screen. It's going to tell me to do something, rest. It's showing me my right hand. Then it's going to make me go, "Squeeze as hard as you can."

Steve: For only about one and a half seconds. So, quit.

Dave: Stop.

Steve: It says stop.

Dave: 104. I had 108 earlier. Now I do my other hand. Oh yeah, baby. 119.

Steve: Left beat your right.

Dave: Yeah, but I was kind of pushing against my leg, probably cheating...

Steve: You're not supposed to do that. That's cheating.

Dave: Now it tells me to go to the right. Watch this, it says squeeze. I'm squeezing, it says hold. But, squeeze less, squeeze more. See how it beeps when I do it wrong? You can hear this, I'll put it by the mic.

Steve: High and low.

Dave: I'm getting an auditory signal that tells me too high, too low. Too high, too low. After a little while of doing this, and I know this because I've

done it enough, you get to the point where the screen just says hold, and then it's not beeping anymore. I can sit here and probably carry on a conversation, but about 20% of my attention is going into what my hand is doing to squeeze this thing. I squeeze it for two minutes. I could, though, be watching Netflix or something.

Steve: You want a little trick while you're doing this?

Dave: Yeah.

Steve: Since I know you're going to divert your attention to Netflix, hold it one bar over. Not one bar under, one bar over. Not under, over.

Dave: You're saying- All right.

Steve: Go one bar up.

Dave: One bar, two bars, oh those are bars.

Steve: Yeah, go one bar up, there you go. Now, keep it up one bar above. That way if you accidentally let it drop down one below your math will even out.

Dave: Oh, I see. You want to kind of hold it a little bit too hard.

Steve: Yeah. Overpressure just a tiny bit.

Dave: You want to make it say squeeze less some of the time.

Steve: Yeah. If you could keep it hold perfect for two minutes that's great.

Dave: What I'm finding-

Steve: Most people can't do that.

- Dave: It's hard to do. But I'm finding already, if you can see my arm on the camera, I'm putting a lot of pressure into this. My bicep is pretty flexed. It's getting-
- Steve: Ganned, right here.
- Dave: My forearm is getting pretty tired, actually, and I still have 35 seconds left to do this. It's not that easy to do, but I'm also, because I do grip training, thank you Tim Ferriss, I'm probably squeezing harder than normal. I'm ready to let go at this point, but I still have 20 seconds left.
- Steve: The second rep is the hardest rep. The first one's not bad. One of my goals is to get that Vibe and come back with ten good push ups.
- Dave: There you go. You tried the holding plank pose, the isometric thing, with vibration on the Bulletproof Vibe. That thing will completely blow out your chest. The other thing is- Oops. I let go too soon. Bad. There you go. Now I get to rest for a minute, then I do my left hand. I also have, downstairs, you saw I have a hyperbaric oxygen chamber, which really improves cognitive performance, especially after flying a lot, and just getting oxygen into the brain. It's kind of cool, because it's a low enough pressure one that you can go in and you can watch something on your iPad, you can actually do work in there. There's a little bit of background noise, but you could actually be on the phone. It's not that big of a deal. You can't physically move, but you're just kind of laying on a mattress for an hour and getting hyper oxygen into your body. Is there any reason I shouldn't do this in 1.4 atmospheres? Can I-
- Steve: No.
- Dave: -stop in 12 minutes? I'm just going to keep this in my hyperbaric chamber. Because my goal is, at least for the next 40 or so days, to do it once a day. That can just cause some neurogenesis in the brain. Having that stuff in the biohacking facility and finding a way to make it more available for people is one of my goals. It's pretty cool. It's telling me to squeeze.



- Steve: We can turn it off if you want.
- Dave: I'm not going to do both arms.
- Steve: Hold it and I'll turn it off.
- Dave: My score is incomplete, ah. It's showing a pie chart of my last seven days.
- Steve: It's all red. It's bad.
- Dave: That's kind of an on-camera demo and an on-air description as best I could do. Sorry if you're driving, but you really shouldn't be watching this on your iPhone if you're driving, just listen.
- Steve: No. We do have an- We'll get a link to you, but we do have a video of the software, the use, and everything else.
- Dave: We'll link to that in the footnotes for this.
- Steve: We can do that.
- Dave: Steve, thanks for coming on Bulletproof Radio today and for making the trip all the way up here so we could do this live.
- Steve: My pleasure.
- Dave: This is a neat technology. I'm impressed that you stuck with it. I know you've been doing this for a few years. It's really, it's hard to do a disruptive technology. Because when you first get started everyone says you're full of crap. Then you're like, "But I can show you that it works. You can see it work. You can feel it work. You can measure it work." Throughout history, especially in medical types of things, you basically have to wait for the generation of doctors to die.
- Steve: Or the..



Dave: ... would come in.

Steve: That is the truth.

Dave: We're breaking that right now. 100,000 people will hear this. They will decide they want to try it. They will get their HSA. They'll talk to their doctors about it. We can shortcut this incredible slow innovation cycle just because we have the cloud, because we have the internet, because we have social media. I'm really hopeful that people will look at this, they'll check this out, and they'll decide if it's useful for them. If it is useful, great. If it's not, they're going to send it back to you anyway. I kind of like that you do that.

Steve: You know what? It's an easy way to overcome fear. Fear is not something you want, and it's not good for you. We're willing to stand behind our product.

Dave: Awesome.

Steve: We've got Mayo Clinic, Journal of Hypertension, the Harvard Heart Letter. We could list the list, it's a who's who. But, can we break through?

Dave: People will do what works. If anything is a testament to that Bulletproof Coffee is. They're like, "Whoa, I felt a difference. I can see a difference." Even if it's counter intuitive. I don't think this is particularly counter intuitive, because you just measure it, you do it for the amount of time, and either it works or it doesn't. Thanks for sticking with it.

Steve: My pleasure.

Dave: With something this disruptive.

Steve: Thanks for having me up.

Dave: You're about to break through. I can see that happening.



Steve: I appreciate it.

Dave: All right. Thanks, man.

Steve: Thank you.

Dave: If you enjoyed this episode of Bulletproof Radio, do me a favor. Go ahead and check out all this research on Zona. Look at what you can do for blood pressure, if it matters to you. If so, check it out on the Bulletproof Store or check it out on zona.com, or wherever else you want to get it. Just use this knowledge that maybe you can train yourself to fix your blood pressure issues if you have them instead of first resorting to drugs. If you need to use drugs to control high risk and this other stuff doesn't work, that's no big deal. It's not a value judgment. It's just what you can do. You also know the other things to do. If you don't have a copy of The Bulletproof Diet please go out there and pick one up. That really helps me work with my publisher, and I am hard at work on the next book for you.

Also, if you haven't seen MOLDY the movie yet, go to moldymovie.com. More than 50,000 people watched the movie in the first week. The feedback has been phenomenal for the documentary. I keep getting these emails from people that say "You know what? I thought it was nuts, but now I get it, and now my family gets it." There's lots of people who watch this and go, "Oh, now I understand why I'm feeling fat and tired for random reasons at times I don't know." This is one of those big sources of kryptonite you can definitely definitely hack. If you did a Google search for mycotoxin hypertension, I wonder what you'd find. Probably something interesting. Have an awesome day.

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